# Sheet # 4 (Structures-Union-Enum)

1. Create a structure data type called **Rectangle**. The structure has two members' length and width. Provide the following functions:
   a) **Area()** to calculate the area of a rectangle.
   b) **Perimeter()** to calculate the perimeter of a rectangle.
   c) **Printing** rectangle members in the form (a,b) where a is the length and b is the width.

   Write a C++ program to test your structure and functions?

2. Create a structure data type called **Complex** for performing arithmetic with complex numbers. Provide the following functions:
   a) **Addition** of two complex numbers.
   b) **Subtraction** of two complex numbers.
   c) **Printing** complex members in the form (a,b) where **a is the real part and b is the imaginary part**.

   Write a C++ program to test your structure and functions?

3. Answer the following problems:

a) Design a structure named **Time**, to represent time in seconds, minutes, and hours?
b) Design a structure named **Date**, to represent date in day, month, and years?
c) **Assume a factory with workers.** It is required to store the information about the worker's starting time for each worker every day. Design a **structure** that may utilize structures of **(a) and (b)** to facilitate the storage of the required information in the factory (Assume any missing data).

4. Write a statement that declares an enumeration called **MediaType** with the values CD, TAPE, and RECORD.

5. Create a structure data type called **Book**. The structure has four members: Title, Author, Date, and Price? The **price** is represented as **a union** of dollars or yen. Write a suitable C++ program to test your structure.